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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/521,025	07/26/2005	Hae-Wook Lee	8947-000122/US	9491
36593 7590 02/18/2010 HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 8910 RESTON, VA 20195				
EXAMINER				
JACKSON, MONIQUE R				
ART UNIT		PAPER NUMBER		
1794				
MAIL DATE		DELIVERY MODE		
02/18/2010		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/521,025

Applicant(s)

LEE ET AL.

Examiner

Monique R. Jackson

Art Unit

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 1899.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/GS/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. The amendment filed 10/22/09 has been entered. Claim 5 has been canceled. Claims 1-4 and 6-43 are pending in the application. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

2. Claims 1-4 and 7-13, 15-18, 25, and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 2002216543A (JP '543.) JP'543 teaches a low reflective, low resistant electrically conductive film comprising two layers, the first of which is formed from a coating composition comprising dispersed indium-tin-oxide particles, nitric acid and ethylene glycol ether (Abstract; Paragraphs 0002, 0013.) JP'543 teaches that the ethylene glycol ether is a monoether or cellosolve (Paragraph 0013) and that the ITO particles have an average primary particle diameter of 25-80nm (Paragraph 0014.) JP'543 teaches that the coating composition for the first layer comprises 5-60wt% cellosolve, 0.02-0.15wt% nitric acid, and 1.4-4.5wt% ITO particles to produce a first layer which preferably comprises 50 to 100% ITO particles (Paragraphs 0019-0020.) JP'543 teaches that the first coating further comprises an organic solvent such as ethyl alcohol and an organic material comprising an unsaturated bond or polymer thereof, such as N-methyl pyrrolidone as utilized in the examples or those as recited in Paragraph 0009 (*reads upon resin binder*; Paragraphs 0009 and 0027; Examples.) JP'543 teaches that the first coating composition is applied to a transparent base such as a glass substrate, by a coating method such as spin coat or spray coating, and then dried, wherein after the second coating, the coated substrate is heated to 175C (0027; Examples.) JP'543 specifically teach examples utilizing ethylcellosolve (*ethylene glycol monoethyl ether*), nitric acid, and ITO particles having

an average particle diameter of 40nm and 50nm (Examples 2-7.) In terms of the instantly claimed “heat-ray cutoff” limitation, the Examiner takes the position that coating taught by JP’543 would inherently provide “heat-ray cutoff” properties.

3. Claims 1-4, 7-13, 15-18, 25, 29-32, and 34 are rejected under 102(a) as being anticipated by Ishihara et al (WO02/081131, 10/17/02, see USPN 7,494,710 for below references.) Ishihara et al teach a coating composition comprising dispersed conductive fine metal particles for producing a conductive coating film having electromagnetic shielding properties, wherein the fine metal particles have a particle size of 1 to 200nm, preferably 2 to 70nm (Abstract; Col. 3, line 45-Col. 4, line 20.) Ishihara et al teach that a matrix binder may be added to the coating with example thermosetting and thermoplastic resins including polycarbonate, polyamide, vinyl chloride, vinyl acetate, acrylic resins, urethane resins, epoxy resins, and melamine resins; in an amount of 0.01 to 0.05 parts by weight per part by weight of the fine metal particles (*reads on about 1% of the coating*; Col. 10, lines 17-35.) Ishihara et al teach that the coating composition may further comprise an organic stabilizer to further improve the dispersibility of the fine metal particles such as polyvinyl alcohol, polyacrylic acid and polycarboxylic acids (*reads upon polymeric acid*) and mixtures thereof; as well as an organic solvent such as ethylene glycol monomethyl ether, ethylene glycol monoethyl ether and ethylene glycol monobutyl ether; and may further contain other conductive fine particles other than the fine metal particles including tin oxide, tin oxide doped with Sb, and indium oxide doped with Sn, having an average particle diameter of 1 to 200nm, preferably 2 to 150nm (Col. 9, lines 33-Col. 10, line 48.) Ishihara et al teach that the fine metal particles are contained in an amount of 0.05 to 5wt%, based on the weight of the coating (Col. 9, lines 41-44) and that the additional conductive fine particles may

be provided in an amount of up to 4 parts by weight per part by weight of the fine metal particles (Col. 10, lines 4-6.) The organic stabilizer may be contained in an amount of from 0.005 to 0.5 parts by weight, per part by weight of the fine metal particles (Col. 10, lines 49-56.) With respect to the solvent amount, the Examiner takes the position that the remaining amount minus the solid content and other components taught by Ishihara et al would result in a solvent content that reads upon the claimed weight percent range. Ishihara et al teach that the substrate may be formed from glass, plastic or ceramic; and that the coating may be applied to the substrate and dried at a temperature from ordinary temperature to about 90C (Col. 11, lines 24-31; Col. 12, lines 11-35.) Ishihara et al teach that the coating may also be cured to cure the matrix ingredient with curing treatments including electromagnetic wave irradiation, thermal curing and curing with a gas (Col. 12, lines 36-44.) Ishihara et al further teach that the coated substrate may be provided on a display device to provide shielding properties and a dye or pigment may be further provided in the layer to absorb light having a specific wavelength (Col. 14, lines 10-52; *reads upon "heat-ray cutoff".*)

Claim Rejections - 35 USC § 103

4. Claims 1-4 and 6-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamoto for the reasons recited in the prior office action and as further evidenced by JP'543 or Ishihara et al. The teachings of Kawamoto et al are discussed in detail in the prior office action. Though Kawamoto et al teach a coating composition comprising a dispersion of conductive nanoparticles such as ITO or ATO nanoparticles, wherein the composition may further comprise dispersing aids to improve dispersibility of the particles in the composition, Kawamoto et al do not specifically teach the addition of the claimed acids. However, it is well established in the art

oxide particles can be surface treated with the instantly claimed acids to improve dispersibility of the particles wherein JP'543 and Ishihara et al each specifically teach similar ITO/ATO conductive particle dispersions comprising the claimed acids. Hence, it would have been obvious to one having ordinary skill in the art at the time of the invention to utilize any conventional dispersing aid including the instantly claimed, obvious acidic dispersing aids to improve the dispersibility of the particles in the invention taught by Kawamoto et al.

Response to Arguments

5. Applicant's arguments with respect to claims 1-4 and 6-43 have been considered but are moot in view of the new ground(s) of rejection.
6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monique R. Jackson whose telephone number is 571-272-1508. The examiner can normally be reached on Mondays-Thursdays, 10:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on 571-272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Monique R Jackson/
Primary Examiner, Art Unit 1794
February 15, 2010